

Recall Importance and Improving Recall Remedy Rates

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BAR Advisory Group Meeting
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Disclaimers

- Some of the work described was sponsored by Honda North America.
- Some work was done with the cooperation of the District of Columbia Department of Motor Vehicles, Vermont DMV, Opus Inspections and Parsons.
- OEM vehicle recall data used in this study was provided by others. Analysis of this data is solely the responsibility of Revecorp. We do not warrant the results of this analysis for any particular purpose or use. Revecorp holds all others harmless for every aspect of the information presented.

Introduction

- About Revecorp
 - We have worked with many states designing and implementing vehicle safety and/or emissions inspection programs for over 20 years
 - Technical support contractor to US EPA on vehicle inspection, OBD, vehicle data and emissions research
 - Perform vehicle emissions control system research and testing
 - Built a VIN decoder to provide vehicle inspection program data for vehicle testing – Currently used in five programs, by private entities, and the US DOJ
 - Distribute recall data as part of VIN decoder
- **We are focused on ways to improve recall remedy rates**

Outline

- Background on recalls
- What is “Takata” and how dangerous is it?
- What are the emissions recall compliance requirements and potential benefits?
- Issues with the current recall notification process
- Ways to improve notification and therefore improve remedy rates - how IM programs can help save lives
- Findings from a recall notification study
- Should recall compliance be mandatory?

Background on Vehicle Recalls

- Current technology vehicles are complex technological wonders
- They operate in extreme temperature cycling, high altitudes, bad weather, after unbelievable vibration, jarring pot holes, etc.
- Yet they protect us in many ways, both from the elements and they keep us safe – using very advanced technology
- Now common are pre-tensioning seat belts, multiple air bags, crush zones, high strength materials, anti-lock braking systems, stability control, etc. - a current air bag system is much more complex than an entire 1970's vehicle
- These technologies have reduced the number of fatalities 80% from 1950 to 2010 – while the number of vehicles has grown by five (50 to 250 million) – a 25 fold decrease
- Still, NHTSA estimates vehicle crashes are the number one killer of Americans under age 34 at a cost of \$230 billion annually

What is a Recall

- There are three types of recalls – Safety (NHTSA), Emissions (EPA or CARB) and OEM Customer Service
- Repairs are free to the current vehicle owner – compliance is almost always voluntary
- For safety, the OEM must try to notify the owner directly at least once, some try multiple methods
- Notification via State registration systems is difficult – most cannot handle sourcing, integrating, printing or tracking recall data
- Determining if a vehicle has a currently open recall is not difficult, knowing when it is closed is not timely
- A survey of motorists indicates that 65% get recalls completed, 30% say the “will complete” and 5% say they will never complete

NHTSA, EPA and CARB Requirements

- NHTSA manages safety recalls
 - NHTSA's job is make sure vehicle manufacturers:
 - Notify owners of affected vehicles in a timely manner
 - Confirm repair(s) will fix the problem
 - NHTSA does not house, distribute or track recall data directly
- US EPA has regulations to enforce emissions recalls through emissions testing programs
 - Currently not enforced at the federal level (40 CFR § 51.370)
- California Air Resources Board (CARB) enforces emissions recalls through registration denial by CA DMV
- Each vehicle OEM stores, tracks, distributes and reports recall data independently

CA Emissions Recall Program

- CARB requires compliance with emissions recalls for registration (registration denial)
- Started program in 1989
- All done manually!
- Pay DMV \$130,000 a year to print the notice on registration forms and handle the paperwork
- OEMs must turn in a list of vehicles which have not been remedied six months after the recall is issued
- These vehicles have their registrations blocked and are sent a notice with registration renewal
- Paper based compliance when completed
- 93 to 98% effective for emissions with registration denial and a paper based program
- Is providing clean air benefits

Recalls Notifications

- News of recalls are ever more common – 28% of all motorists say they received a recall notice in the last two years
- Recall compliance is critical to saving lives and reducing costs
- As noted, most State registration systems are very old and cannot handle integrating, printing and tracking recall data

Is there a better way to reach vehicle owners?

- Printing recall information on vehicle inspection reports can create over 150 million “touchpoints” with unique vehicles in two years – making them ideal for reaching the vehicle owners
- This can place recall information into the hands of the current owner, on a government form, with real time correct information at a very low cost
- The Takata air bag recall could impact 100 million air bags / 80 million vehicles, so getting enough parts is difficult (there are about 250 million vehicles in the US)

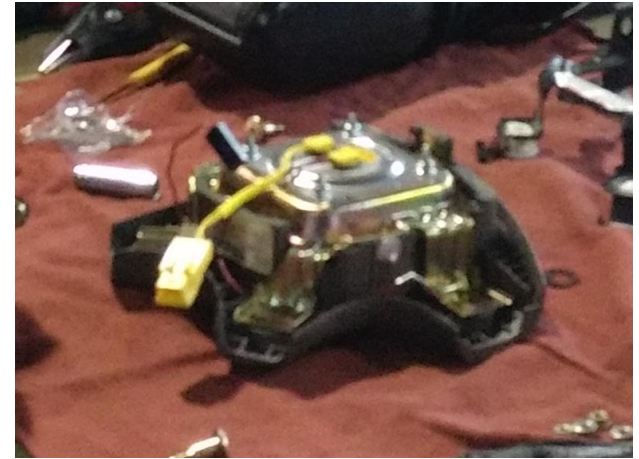
How Precise is an Air Bag?

**This is your airbag
on time.**

Takata Failure

- In 19 makes of vehicles from 2002 to 2015
- When activated, instead of slowly releasing gas to inflate the air bag the canister explodes

What is a Takata Inflator?



Takata Failure

- In 19 makes of vehicles from 2002 to 2015
- When activated, instead of slowly releasing gas to inflate the air bag the canister explodes
- The Takata “Alpha” air bag recall (MY 2002 and 2003 Hondas) has a 50% chance of causing death or serious injury if the air bag is activated – If you know someone who has one please have them check to see if it is recalled! There is a free iOS and Android app to check recalls – VINPro
- 11 fatalities and over 100 injuries to date
- 1.2 million airbag deployments spread over 15 years
- Despite these figures, airbags in general are not a danger and have a net positive impact:

The Department of Transportation estimates that between 1987 and 2012, frontal airbags have saved 37,000 lives.

Can Remedy Rates be Increased?

- Performed a study to determine if providing recall information on vehicle inspection reports directly to motorists will increase recall remedy rates
- The District of Columbia and Vermont started printing recall data on vehicle inspection reports in January
- This provided the opportunity to measure if there was an increase in remedy rates before and after the increased notifications
- Both programs use Revecorp's "VINterpreter" VIN decoder to provide recall data



VEHICLE INSPECTION REPORT
GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Motor Vehicles
Washington, DC 20024

Phone: (202) 737-4404 TTY: 711 Email: dmv@dc.gov Web: <http://dmv.dc.gov>



Inspection Date: **11-FEB-2017 08:42 AM** Inspection Report: **1037XXXX** Lane: **1**

Plate: DSXXXX (DC) **Year:** 2000 **GVWR:**
VIN: 1GCEK14T9YEXXXXXX **Make:** CHEV **Insp. Key:** 1037XXX
Inspection: PASSENGER **Model:** SILVERADO **Test(I/R):** INITIAL
Odometer: 294,000 **Fuel Type:** GASOLINE **Test Number:** 1

EMISSIONS: PASS			SAFETY: N/A			OVERALL RESULT
OBD	CATALYST	GAS CAP	BRAKE	VISUAL	FOR HIRE	PASS <i>Inspection good until 11-FEB-2019</i>
PASS	PASS	PASS	NOT TESTED	NOT TESTED	N/A	

OBD Test Details

(note: MIL = Check Engine Light)

Does the MIL work? PASS (YES)
Is the MIL on? PASS (NO)
Is the MIL commanded on? PASS (NO)

Catalyst Test Details

Visual Inspection of your Catalytic Converter: PASS

Gas Cap Test Details

Gas Cap Test Result PASS

OPEN RECALL Information

Your Vehicle: 1GCEK14T9YE129427 2000 Chevrolet Silverado

NHTSA#	Campaign#	Type	Recall Title
	N000024	ZCSP	FRONT BRAKE HOSE ABRASION
00V345	N000093	ZPSR	FRONT BRAKE PIPE CONTACT WITH BODY CROSS SILL
02V178	N020029	ZPSR	AIR BAG SENSING DIAGNOSTIC MODULE (SDM)
05V379	N050068	ZPSR	FRONT WHEEL SPEED SENSOR CORROSION
06V066	N060019	ZPSR	TAILGATE SUPPORT CABLE REPLACEMENT

What should I do about the listed recalls? When it is determined that there is a risk to safety or high emissions, the vehicle mfr is required to fix the vehicle at no cost to the consumer. If your vehicle is included in a recall, it is very important that you get it fixed as soon as possible given the potential danger to you and your passengers if it is not addressed. Contact your vehicle manufacturer/dealer to arrange for repairs or please call the NHTSA Vehicle Safety Hotline at 1-888-327-4236.

Remedy Rate Changes - DC

- 23.1% of all vehicles in DC had one or more open recalls – The rate was 21.4% in VT
 - In DC, the durations of open recalls ranged:
 - Average = 908 days (2 years, six months)
 - Median = 466 days (1 year, 3 months)
 - Minimum = 0 (the recall was reported on the day the vehicle came in and was closed within 30 days)
 - Maximum reported = 9,163 days (25 years)
- 10.1% of all vehicles had an open recall for an “air bag”
- 5.1% of the vehicles with recalls or 1.2% of all vehicles indicated “parts not available” or equivalent
- Recall remedy rates increased from 6.8% to 12.9%, a 90% increase
- Active notification increased remedy for older open recalls
 - Average days open went from 508 days to 648 days old

Remedy Rate Changes – VT

- The remedy rate in VT was **28.2%**; **this is more than 4 times the natural closure rate (6.8%) and more than double the rate in DC!**
- Why the differences?
 - VT is a decentralized program, some inspections are done at dealerships where the recalls can be fixed at the time of inspection
 - VT has mandatory safety inspections so motorists are accustomed to fixing safety issues
 - The program is new – Motorist and shops are curious about the vehicle inspection reports so they actually look at them
 - The recalls are on their own VIR page unlike DC
 - The space allocated to recall information and message is larger
 - VT has the recall data hyperlinked on the VIRs and available on-line

FAIL - SAFETY and OBD



Department of Motor Vehicles
Agency of Transportation
dmv.vermont.gov

INSPECTION TEST REPORT FORM



DMV Inspections
120 State Street
Montpelier, Vermont 05603-0001
802.828.2094

Plate: PLT 123	Year: 2009	GVWR: 5500
VIN: KNADE223196536369	Make: KIA	Type: Initial
Veh. Type: Pleasure Car or Light Truck	Model: RIO	Sticker Number:
Odometer: 264189	Fuel Type: Gasoline	Sticker Insert:

SAFETY INSPECTION RESULT: FAIL

Inspection Item	Result	Comment
Registration and Insurance	Pass	Check and measure tires for wear - http://www.avisportal.com/car21
Wheels and Tires	Fail	
Steering and Suspension	Pass	Check for exposed wiring/damage and poor connections - http://www.avisportal.com/car51
Brake Systems	Pass	
Lighting and Electrical	Fail	Check primary and secondary hood latch for proper operation - http://www.avisportal.com/car71
Vehicle Glazing	Pass	
Body and Sheet Metal	Fail	
Exhaust System	Pass	
Fuel System	Pass	
Reconstructed Vehicles	Pass	
Fuel Cap and Catalytic Converter	Pass	
Flaps and Fenders	Pass	

OBD-II INSPECTION RESULT: FAIL

Systems Monitored	Status	Malfunction Indicator Lamp (MIL) Results		
Misfire	Ready	Does the Check Engine light work?		PASS
Fuel System	Ready	Is the Check Engine light on?		PASS
Comprehensive Components	Ready	Did the vehicle respond that the Check Engine light should be on?		FAIL
Catalyst	Ready			
Heated Catalyst	N/A			
Evaporative System	Ready	Diagnostic Trouble Codes (DTC) if Present		
Secondary Air	N/A	DTC	Description	
Oxygen Sensor	Ready	P0313	Misfire Detected with Low Fuel	
Oxygen Sensor Heater	Ready			
EGR System	Ready			
Air Conditioning System	Ready			

OVERALL TEST RESULT: FAIL

Vehicles that fail the Emissions Inspection may be eligible for warranty coverage for the required repairs. Vehicle manufacturers are required by federal law to provide federally certified vehicles with Emissions Warranties for at least eight (8) years or eighty thousand (80,000) miles and on some California certified vehicles up to fifteen (15) years or one hundred fifty thousand (150,000) miles. Warranty coverage may vary depending upon vehicle make and model year.

For further information, please refer to the Emissions Warranty section of the vehicle owner's manual. You may also contact the manufacturer, dealership or repair facility.

Please Note: Compliance with the recalls (the repairs for which will be performed at no cost to the motorist) should be done to improve the chances of passing on re-inspection.

Primary Tech #: 9023	Station #: 1054	Date: 03/19/2016
Tech Name: John Smitherson	Primary Technician Signature: <i>J. Smitherson</i>	
Secondary Tech #: 9089		
Tech Name: Robert Walters		



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INSPECTION TEST REPORT FORM

DMV Inspections
120 State Street
Montpelier, Vermont 05603-0001
802.828.2094

Plate: PLT 123	Year: 2009	Type: Initial
VIN: KNADE223196536369	Make: KIA	Sticker Number:
GVWR: 5500	Model: RIO	Sticker Insert:

The recall items for your vehicle are listed below. You can view the details by clicking on the Recall Description(s) below or by entering the Vehicle Identification Number (VIN) at <http://avisrecalls.com>

NHTSA #	Type	Recall Description	Status
14V174000	SAFETY	LOWER CONTROL ARM CORROSION	NOT COMPLETED
04V583000	SAFETY	ACCELERATOR CABLE	COMPLETED
07V157000	SAFETY	ABS MODULE ELECTRICAL WIRING HARNESS	COMPLETED

What is a recall?

When a manufacturer or the National Highway Traffic Safety Administration (NHTSA) determines that a car or item of motor vehicle equipment creates an unreasonable risk to safety or fails to meet minimum safety standards, the manufacturer is required to fix that car or equipment at no cost to the consumer. That can be done by repairing it, replacing it, offering a refund (for equipment) or, in rare cases, repurchasing the car.

What should I do if my vehicle is included in this recall?

If your vehicle is included in this recall, it is very important that you get it fixed as soon as possible given the potential danger to you and your passengers if it is not addressed.

You should receive a separate letter in the mail from the vehicle manufacturer, notifying you of the recall and explaining when the remedy will be available, whom to contact to repair your vehicle or equipment, and to remind you that the repair will be done at no charge to you.

If you believe your vehicle is included in the recall, but you do not receive a letter in the mail from the vehicle manufacturer, please call NHTSA's Vehicle Safety Hotline at 1-888-327-4236, or contact your vehicle manufacturer or dealership.

Thank you for your attention to this important safety matter and for your commitment to helping save lives on America's roadways.

Should Compliance be Mandatory?

- States deny registration for failure to repair emissions control systems, not paying parking tickets, not paying registration, etc.
- Wearing seat belts in vehicles or a helmet on motorcycles are required because they are in the public interest
- Should someone be able to drive a known dangerous or high polluting vehicle on road – endangering others – when a free repair is available?
- Issuing recalls and notifications do not create benefits
- Remedy of recalls is what provides safety or environmental benefits
- States are the only ones who can prevent the sale or operation of dangerous or polluting vehicles
- Should states have emissions / safety testing programs without requiring compliance with emissions / safety recalls?
- Data indicating when a recall is completed would be needed to require compliance

Conclusions

- Increased recall remedy rates can save lives and clean the air
- Recall data can be provided to approximately half of the population via vehicle inspection programs
- Providing recall information to motorists on vehicle inspection reports drastically increases recall remedy rates
- Printing recalls on inspection reports is very low cost
- EPA should consider providing emissions benefit credit to states who increase emissions recalls compliance
- Recall data need to be centralized and homogenized – this should happen by the end of the year
- OEMS need to have faster recall closure updates if recall compliance is going to be mandatory
- **Providing recall data to the public increases the value of vehicle inspection programs ensuring their longevity**

Thank you

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Revecorp Inc.

Draft VT Recall Notification

What is a recall?

When a manufacturer, the National Highway Traffic Safety Administration (NHTSA) or the Environmental Protection Agency (EPA) determines that a car or item of motor vehicle equipment creates an unreasonable risk to safety, fails to meet minimum safety standards, or an emission control component is not functioning properly the manufacturer is required to fix that car or equipment at no cost to the consumer.

What should I do if my vehicle is included in this recall?

If your vehicle is included in this recall, **it is very important that you get it fixed as soon as possible given the potential danger to you, your passengers or the environment if it is not addressed**. You should receive a separate letter in the mail from the vehicle manufacturer, notifying you of the recall and explaining when the remedy will be available, whom to contact to repair your vehicle or equipment, and to remind you that the repair will be done at no charge to you. If you do not receive a letter from the vehicle manufacturer, please contact your vehicle manufacturer or dealership or for safety items you may also call NHTSA's Vehicle Safety Hotline at 1-888-327-4236.

Thank you for your attention to this important matter and for your commitment to helping save lives on America's roadways and protecting the environment.

40 CFR § 51.370 Compliance with Recall Notices

States shall establish methods to ensure that vehicles subject to enhanced I/M and that are included in either a “Voluntary Emissions Recall” as defined at 40 CFR [85.1902\(d\)](#), or in a remedial plan determination made pursuant to section 207(c) of the Act, receive the required repairs. States shall require that owners of recalled vehicles have the necessary recall repairs completed, either in order to complete an annual or biennial inspection process or to obtain vehicle registration renewal. All recalls for which owner notification occurs after January 1, 1995 shall be included in the enhanced I/M recall requirement.

(a) *General requirements.*

(1) The State shall have an electronic means to identify recalled vehicles based on lists of VINs with unresolved recalls made available by EPA, the vehicle manufacturers, or a third party supplier approved by the Administrator. The State shall update its list of unresolved recalls on a quarterly basis at a minimum.

(2) The State shall require owners or lessees of vehicles with unresolved recalls to show proof of compliance with recall notices in order to complete either the inspection or registration cycle.

(3) Compliance shall be required on the next registration or inspection date, allowing a reasonable period to comply, after notification of recall was received by the State.

(b) *Enforcement.*

(1) A vehicle shall either fail inspection or be denied vehicle registration if the required recall repairs have not been completed.

(2) In the case of vehicles obtaining recall repairs but remaining on the updated list provided in paragraph (a)(1) of this section, the State shall have a means of verifying completion of the required repairs; electronic records or paper receipts provided by the authorized repair facility shall be required. The vehicle inspection or registration record shall be modified to include (or be supplemented with other VIN-linked records which include) the recall campaign number(s) and the date(s) repairs were performed. Documentation verifying required repairs shall include the following:

(i) The VIN, make, and model year of the vehicle; and

(ii) The recall campaign number and the date repairs were completed.